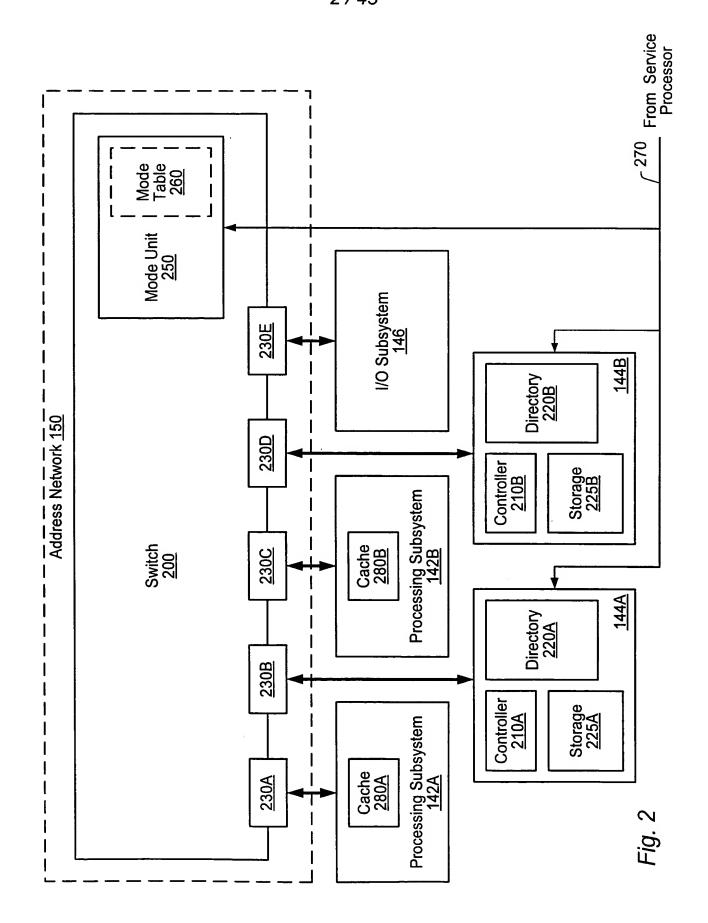


Fig. 1



			260
5.00	Address Range <u>502</u>	Home <u>504</u>	Mode <u>506</u>
510A —	Α	Client 3	PTP
510B —	В	Client 3	ВС
510C	С	Client 1	PTP
510D —	D	Client 4	PTP
510E —	Е	Client 3	ВС
510F —	F	Client 2	ВС
510G —	G	Client 5	PTP
•		•	
	•	•	•

Fig. 3

		1			T	_					i
Owner <u>614</u>	Client 3	Client 3	Client 3	Client 1	None	Client 3	Client 4	•	•	•	
Client 5 612	_		-	_	_	_	_	•	•	•	
Client 4 610	_	_		S	w	_	Σ		•	•	
Client 3 608	Σ.	Σ	Σ	S	S	0	_	•	•	•	
Client 2 606	_	_		_	_	_	. <u>—</u>	•	•	•	
Client 1 604		_		0	v	S			•	•	
Address 602	Aa	Ab	Ac	Ad	Ae	Af	Ag	•	•	•	
	620A —	620B —	620C —	620D	620E —	620F ~	620G —				

Fig.

<del></del>	<u> </u>				· · · · · ·	T					ı
Owner <u>614</u>	Client 3	Client 3	Client 3	Client 1	None	Client 3	Client 4	•	•	•	
Client 5 <u>612</u>	-	1	_	_	_	_	ı	•	•	•	
Client 4 <u>610</u>	_		_	œ	œ	_	M	•	•	•	
Client 3 608	W	W	M	œ	œ	œ	_	•	•	•	
Client 2 <u>606</u>	_	_		_	_	_	_	-	•	•	
Client 1 604	_	_		œ	œ	œ	_		•	•	
Address 602	Aa	Ab	Ac	Ad	Ae	Af	Ag	•	•	•	
	620A —	620B	620C —	620D —	620E ~	620F —	6206 —	•			•

Fig. 4A

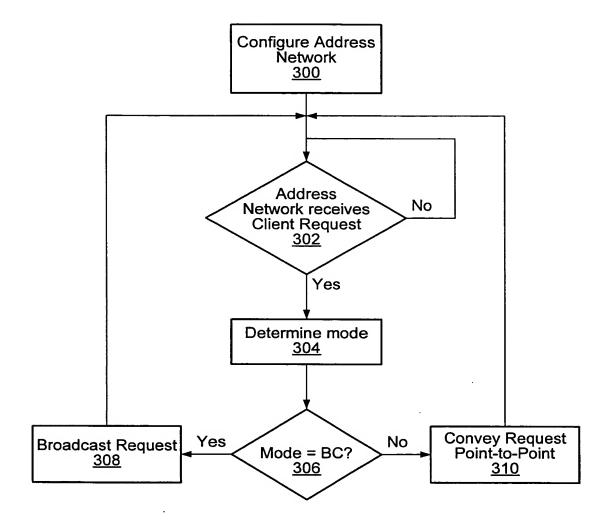


Fig. 5

12

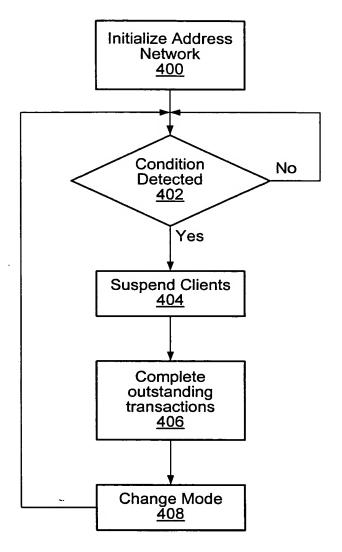


Fig. 6

Packet		Address Sp	ace	
Туре	Full Name	Cacheable	1/0	Description
RTS	ReadToShare	Υ		Requests read-only copy of cache line
RTO	ReadToOwn	Υ		Requests writable copy of cache line
RTWB	ReadToWriteBack	Υ		Requests to receive writable copy of cache line and send cache line to memory
RS	ReadStream	Υ		Request read-once copy of cache line
WS	WriteStream	Υ		Request to write entire cache line and send to memory
WB	WriteBack	Υ		Request to send cache line from owning device to memory, device does not keep copy
WBS	WriteBackShared	Υ		Request to send cache line from owning device to memory, device keeps read-only copy
RIO	ReadIO		Υ	Request to read IO locations
WIO	WritelO		Υ	Request to write IO locations
INT	Interrupt			Sends an interrupt, target is specified by address

Fig. 7

Transaction Type	Initiator Receives	Initiator Sends
RTS	DATA	
RTO	DATA	
RTWB	DATA & PRN	DATA
RS	DATA	
WS	ACK & PRN	DATA
WB	PRN	DATA or NACK
WBS	PRN	DATA or NACK

Transaction Type	Initiator Receives	Initiator Sends
RIO	DATA	
WIO	PRN	DATA
INT	PRN or NACK	DATA or Nothing

Fig. 9

Access Rights Symbol	Access Rights Name	Description	Data Present?
W	Write	Read and Write	Yes
Α	All-Write	Write-only, must write entire cache line	Yes (or ACK)
R	Read	Read-only	Yes
Т	Transient-Read	Read-only, read can be reordered	Yes
	Invalid	No access rights	Yes or No

Fig. 10A

Ownership Status Symbol	Ownership Status Name	Description	Data Present?
0	Owner	Owns cache line	Yes or No
N	Not Owner	Does not own cache line	Yes or No

Fig. 10B

Access Right	Ownership Status
W	0
R	0
	0
W	N
A	N
R	N
T	N
T	N

Fig. 10C

# REPLACEMENT SHEET 10/43

Transaction Type	New Owner
RTS	Previous Owner
RTO	Initiator
RTWB	Memory
RS	Previous Owner
WS	Memory
WB	Memory (or Previous Owner)
WBS	Memory (or Previous Owner)

Fig. 11

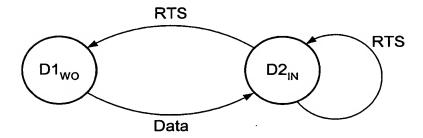


Fig. 12A

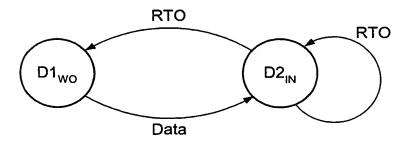
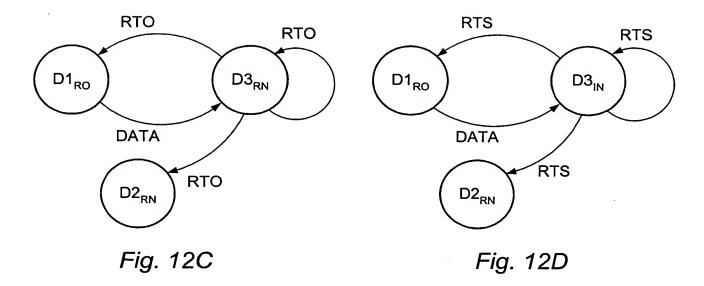
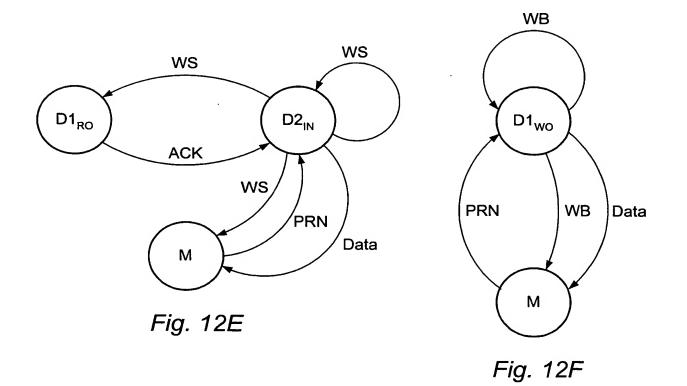
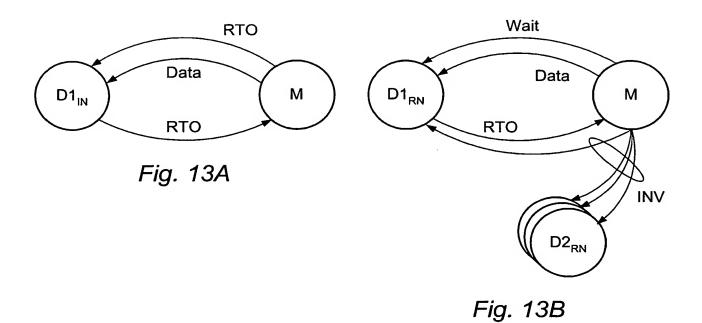
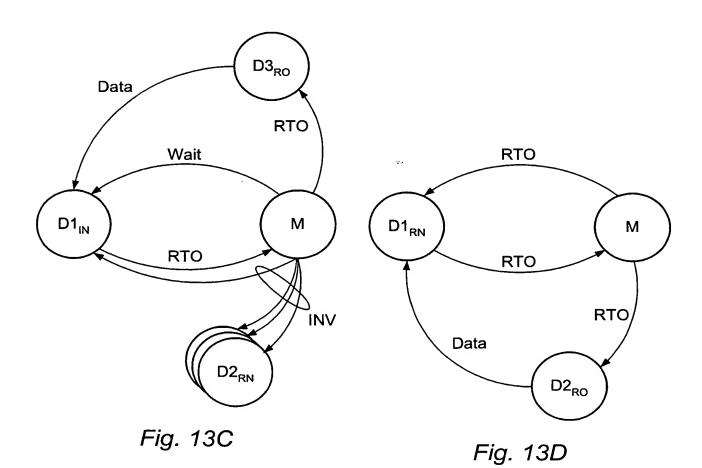


Fig. 12B









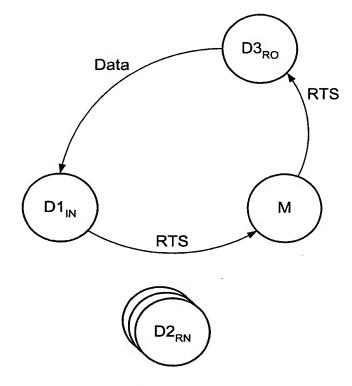


Fig. 13E

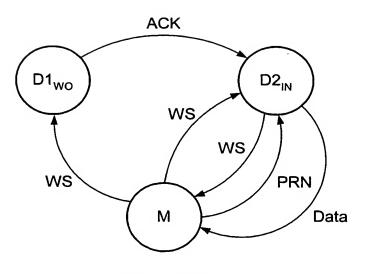


Fig. 13F

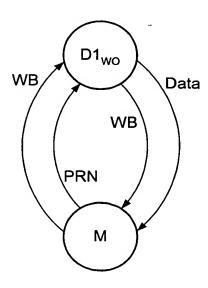
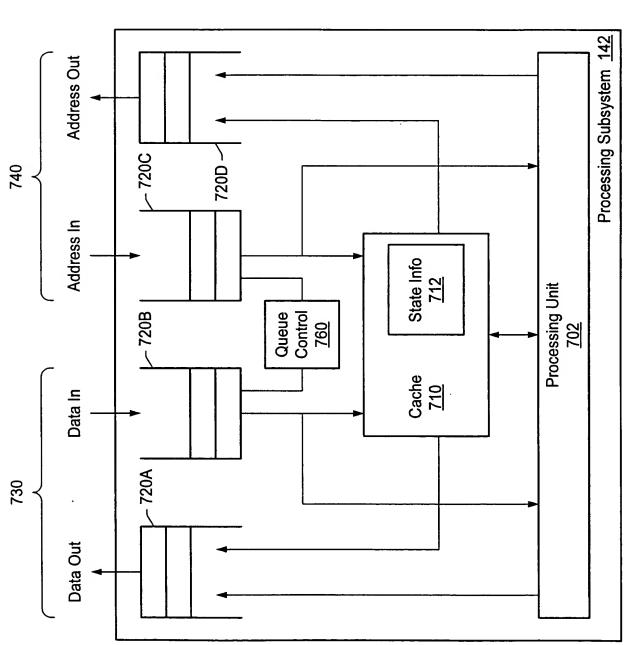


Fig. 13G

Fig. 14



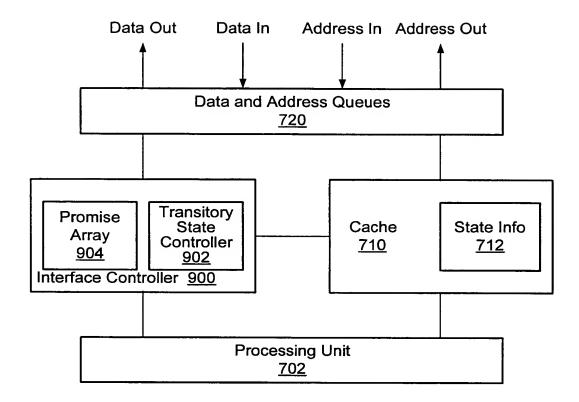


Fig. 15

# REPLACEMENT SHEET 16/43

Wolfin Waiting for WAIT and ACK for local WS, has write access and ownership  Stable state with write access and ownership  Wolfing for WAIT and ACK for local WS, has read access and ownership  Wolfing for DATA for local RTO, has read access and ownership  Rode Waiting for INV and DATA for local RTO, has read access and ownership  Rode Waiting for INV for local RTO, has read access and ownership  Rode Waiting for INV for local RTO, has read access and ownership  Rode Waiting for INV for local RTO, has read access and ownership  Rode Waiting for INV for local RTO, has nead access and ownership  Rode Waiting for DATA for local RTO, has no access rights, has ownership  Iode Waiting for INV and DATA for local RTO, has no access rights, has ownership  Iode Waiting for INV for local RTO, has no access rights, has ownership  Wolfing for INV for local RTO, has no access rights, has ownership  Wolfing for INV for local RTO, has no access rights, has ownership  Wolfing for INV for local RTO, has no access, no ownership  Wolfing for INV for local RTO, has write access, no ownership  Wolfing for ACK for local WS, has write access, no ownership  Wolfing for ACK for local WS, has write access, no ownership  Wolfing for WAIT for local RTO, has write access, no ownership  Wolfing for WAIT for local RTO, has write access, no ownership  Wolfing for WAIT for local WS after performing write to entire cache line, no ownership  Rode Waiting for ACK for local WS, has read access, no ownership  Rode Waiting for INV for local WS, has read access, no ownership  Rode Waiting for INV for local RTO, has read access, no ownership  Rode Waiting for INV for local RTO, has read access, no ownership  Rode Waiting for INV for local RTO, has read access, no ownership  Rode Waiting for INV for local RTO, has read access, no ownership  Rode Waiting for INV and DATA for local RTO, has read access, no ownership  Rode Waiting for WAIT and DATA for local RTO, has read access, no ownership  Waiting for WAIT and DATA for local RTO, has read access, no ow	StateD	escription
WO Stable state with write access and ownership  ROfh Waiting for WAIT and ACK for local WS, has read access and ownership  ROe Waiting for INV and DATA for local RTO, has read access and ownership  ROde Waiting for INV and DATA for local RTO, has read access and ownership  ROde Waiting for INV for local RTO, has read access and ownership  ROce Waiting for WAIT and DATA for local RTO, has read access and ownership  ROce Waiting for WAIT and DATA for local RTO, has read access and ownership  RO Stable state with read access and ownership  IOde Waiting for INV and DATA for local RTO, has no access rights, has ownership  IOde Waiting for INV for local RTO, has no access rights, has ownership  IOde Waiting for INV for local RTO, has no access rights, has ownership  IOd Waiting for INV for local RTO, has no access rights, has ownership  IOd Waiting for INV for local RTO, has no access rights, has ownership  WNI Waiting for ACK for local WB/WBS, has write access, no ownership  WNI Waiting for WAIT for local RTVB, write access, no ownership  WNI Waiting for WAIT for local RTVB, write access, no ownership  WNI Waiting for WAIT for local RTVB, has write access, no ownership  WNI Waiting for WAIT for local RTVB, has write access, no ownership  WNI Stable state with write access, no ownership (caused by foreign transaction that took ownership, but for which no copyback has yet been performed)  ANI Able to send DATA for local WS after performing write to entire cache line, no ownership  RNI Waiting for ACK for local WS, has read access, no ownership  RNI Waiting for INV for local WS, has read access, no ownership  RNI Waiting for INV for local WS, has read access, no ownership  RNG Waiting for INV for local RTO, has read access, no ownership  RNG Waiting for INV for local RTO, has read access, no ownership  RNG Waiting for INV for local RTO, has read access, no ownership  RNC Waiting for WAIT and DATA for local RTO, has read access, no ownership  RNC Waiting for WAIT and DATA for local RTO, has no access and no ownership		
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ROde Waiting for INV and DATA for local RTO, has read access and ownership  ROde Waiting for INV for local RTO, has read access and ownership  ROce Waiting for INV for local RTO, has read access and ownership  RO Stable state with read access and ownership  IOe Waiting for DATA for local RTO, has no access rights, has ownership  IOe Waiting for INV and DATA for local RTO, has no access rights, has ownership  IOd Waiting for INV and DATA for local RTO, has no access rights, has ownership  Winj Able to send DATA/NACK for local WBWBS, has write access and no ownership  WNi Able to send DATA for local RTWB, write access, no ownership  WNi Waiting for ACK for local RTO, has write access, no ownership  WNe Waiting for WAIT for local RTO, has write access, no ownership  WNe Waiting for WAIT for local RTO, has write access, no ownership  WN Stable state with write access, no ownership (caused by foreign transaction that took ownership, but for which no copyback has yet been performed)  ANI Able to send DATA for local WS after performing write to entire cache line, no ownership  RNj Able to send DATA/NACK for local WBWBS, has read access and no ownership  RNj Waiting for INV for local WS, has read access, no ownership  RNg Waiting for INV for local WS, has read access, no ownership  RNe Waiting for INV for local RTO, has read access, no ownership  RNd Waiting for INV and DATA for local RTO, has read access, no ownership  RNd Waiting for WAIT and DATA for local RTO, has read access, no ownership  RNd Waiting for WAIT and INV for local RTO, has read access, no ownership  RNC Waiting for WAIT and DATA for local RTO, has read access, no ownership  RND Stable state with read access, no ownership  RN Waiting for INV for local RTO, has read access, no ownership  RN Waiting for TND, RTWB, WS, WB or WBS after receiving an ERR or ERRL. No access rights, no ownership  INK Waiting for INV for local RTO, has no access and no ownership  INM Waiting for INV for local RTO, has no access rights, no ownership  ING Waiting for INV for loc		
ROde Waiting for INV for local RTO, has read access and ownership  ROe Waiting for WAIT and DATA for local RTO, has read access and ownership  RO Stable state with read access and ownership  IOe Waiting for DATA for local RTO, has no access rights, has ownership  IOe Waiting for INV and DATA for local RTO, has no access rights, has ownership  IOd Waiting for INV for local RTO, has no access rights, has ownership  IOd Waiting for INV for local RTO, has no access rights, has ownership  WNi Able to send DATA for local RTWB, write access, no ownership  WNi Able to send DATA for local RTWB, write access, no ownership  WNi Waiting for ACK for local WS, has write access, no ownership  WNi Waiting for WAIT for local RTO, has write access, no ownership  WN Waiting for WAIT for local RTO, has write access, no ownership  WN Stable state with write access, no ownership (caused by foreign transaction that took ownership, but for which no copyback has yet been performed)  ANI Able to send DATA for local WS after performing write to entire cache line, no ownership  RNj Able to send DATA/NACK for local WB/WBS, has-read access and no ownership  RNg Waiting for INV for local WS, has read access, no ownership  RNg Waiting for INV for local WS, has read access, no ownership  RNe Waiting for INV for local RTO, has read access, no ownership  RNd Waiting for INV and DATA for local RTO, has read access, no ownership  RNd Waiting for INV and DATA for local RTO, has read access, no ownership  RNC Waiting for WAIT and INV for local RTO, has read access, no ownership  RNC Waiting for WAIT and INV for local RTO, has read access, no ownership  RND Waiting for WAIT and INV for local RTO, has read access, no ownership  RND Waiting for WAIT and INV for local RTO, has read access, no ownership  RND Waiting for WAIT and INV for local RTO, has no access and no ownership  INN Waiting for INV for local WS or for DATA for local RTWB, has no access rights, no ownership  IND Waiting for INV for local WS or for DATA for local RTWB, has no access rights		
ROce Waiting for WAIT and DATA for local RTO, has read access and ownership  RO Stable state with read access and ownership  IOe Waiting for DATA for local RTO, has no access rights, has ownership  IOde Waiting for INV and DATA for local RTO, has no access rights, has ownership  Waiting for INV for local RTO, has no access rights, has ownership  Whi Able to send DATA/NACK for local WB/WBS, has write access and no ownership  WNI Able to send DATA for local RTWB, write access, no ownership  WNI Waiting for ACK for local WS, has write access, no ownership  WNI Waiting for WAIT for local RTO, has write access, no ownership  WNI Stable state with write access, no ownership (caused by foreign transaction that took ownership, but for which no copyback has yet been performed)  ANI Able to send DATA for local WS after performing write to entire cache line, no ownership  RNI Waiting for ACK for local WB/WBS, has-read access and no ownership  RNI Waiting for INV for local WS, has read access, no ownership  RNE Waiting for INV for local RTO, has read access, no ownership  RNE Waiting for INV for local RTO, has read access, no ownership  RNE Waiting for INV for local RTO, has read access, no ownership  RNCE Waiting for INV for local RTO, has read access, no ownership  RNCE Waiting for INV for local RTO, has read access, no ownership  RNCE Waiting for WAIT and DATA for local RTO, has read access, no ownership  RNCE Waiting for WAIT and DATA for local RTO, has read access, no ownership  RNCE Waiting for RO, RTWB, WS, WB or WBS after receiving an ERR or ERRL. No access rights, no ownership  INK Waiting for RTO, RTWB, WS, WB or WBS after receiving an ERR or ERRL. No access rights, no ownership  Waiting for INV for local RTO, has no access rights, no ownership  INM Waiting for INV for local RTO, has no access rights, no ownership  Waiting for INV for local RTO, has no access rights, no ownership  Node Waiting for INV for local RTO, has no access rights, no ownership  Node Waiting for INV for local RTO, has no access rights, no o		
RO Stable state with read access and ownership IOE Waiting for DATA for local RTO, has no access rights, has ownership IOE Waiting for INV and DATA for local RTO, has no access rights, has ownership IOE Waiting for INV for local RTO, has no access rights, has ownership IOE Waiting for INV for local RTO, has no access rights, has ownership WNj Able to send DATA/NACK for local RTWB, write access, no ownership WNi Able to send DATA for local RTWB, write access, no ownership WNh Waiting for ACK for local WS, has write access, no ownership WNe Waiting for WAIT for local RTO, has write access, no ownership WN Stable state with write access, no ownership (caused by foreign transaction that took ownership, but for which no copyback has yet been performed) ANi Able to send DATA for local WS after performing write to entire cache line, no ownership RNj Able to send DATA/NACK for local WB/WBS, has read access and no ownership RNg Waiting for INV for local WS, has read access, no ownership RNg Waiting for INV for local RTO, has read access, no ownership RNd Waiting for INV for local RTO, has read access, no ownership RNd Waiting for INV and DATA for local RTO, has read access, no ownership RNd Waiting for INV for local RTO, has read access, no ownership RNd Waiting for INV and DATA for local RTO, has read access, no ownership RNce Waiting for WAIT and DATA for local RTO, has read access, no ownership RNce Waiting for WAIT and DATA for local RTO, has read access, no ownership RNd Waiting for RVAIT and DATA for local RTO, has read access, no ownership RNd Waiting for RVAIT and DATA for local RTO, has read access, no ownership RNc Waiting for RVAIT and DATA for local RTO, has read access, no ownership RNd Waiting for RVAIT and DATA for local RTO, has nead access, no ownership RN Stable state with read access, no ownership RN Waiting for RTO, RTWB, WS, WB or WBS after receiving an ERR or ERRL. No access rights, no ownership RN Waiting for INV for local RTO, has no access rights, no ownership RNd Waiting for DATA for local RTO,		<u> </u>
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IOde		· · · · · · · · · · · · · · · · · · ·
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INa Waiting for DATA for local RTS, DATA may grant read access, has no access rights, no ownership		
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## REPLACEMENT SHEET 17/43

Action Code	Meaning	Comments
/a	Commit to send an ACK packet as a copyback by appending an entry for the received foreign packet in a copyback list. Set copy tag to I.	ACK packet may be sent from any state that allows copyback packets to be sent. It must be sent within a finite time of first entering such a state, regardless of what other packets have been received.
c/	Commit to send DATA and/or ACK packets for all outstanding copybacks for this cache line. Next, set copy tag to W. Then, perform state transition based on current state & local packet being received	If sending copybacks changes the state from a state X to a state Y, the local packet being received will be received in state Y (and as a result, the entry for state Y in the table must be consulted to determine the state transition caused by receiving the local packet).
/d	Commit to send DATA packet for local RTWB, WS, WB, or WBS transaction. DATA packet is sent in response to receiving a PRN packet for this transaction.	DATA packet may not be sent until a PRN packet is received. It must be sent within finite time of receiving the PRN packet & having entered a state that permits the packet to be sent, regardless of what other packets have been received.
e/	Clear outstanding copyback commitments for this line by removing them from the copyback list. Do not send DATA or ACK packets for entries that were on the copyback list. Next, perform state transition based on current state & local packet being received.	The action code is used in response to receiving an ERR or ERRL packet. If an ERR packet was received in place of a PR or PRACK packet, or if an ERRL packet was received in place of a DATAP packet, a DATA packet may be sent to the error device.
/i	Commit to send a DATA packet as a copyback by appending an entry for the received foreign packet in the copyback list. Set copy tag to I.	DATA packet may be sent from any state that allows copyback packets to be sent. It must be sent within finite time of first entering such a state, regardless of what other packets have been received.
/j	Set write tag to I.	
/n	Commit to send NACK packet for local WB or WSB transaction & set write tag to W. NACK packet is sent in response to receiving a PRN packet for this transaction.	NACK packet may be sent at any time after receiving the PRN packet. It must be sent within finite time of receiving the PRN packet, regardless of what other packets have been received.
/r	Commit to send DATA packet as a copyback by appending an entry for the received foreign packet in the copyback list. If copy tag is W, set copy tag to R.	DATA packet may be sent from any state that allows copyback packets to be sent. It must be sent within finite time of first entering such a state, regardless of what other packets have been received.
/s	Set write tag to R.	
/w	Commit to send DATA packet as a copyback by appending an entry for the received foreign packet in the copyback list.	DATA packet may be sent from any state that allows copyback packets to be sent. It must be sent within finite time of first entering such a state, regardless of what other packets have been received.
/y	If copy tag is R, set copy to I.	Used to record invalidating transactions while a copyback for a foreign memory remap is pending.
/z	If write tag is R, set write to I.	Used to record invalidating transactions while a local WBS transaction is pending.

Silent Downgrade 8 Write tag I Send DATA or NACK Write tag R Write tag W ERRL for RTO/ RTWB (2) e | | ERRL for RTS/RS **ERR (2)** WB/WBS ACK for WS (h) INV for WS (g) WAIT for WS c/INg (f) WS (f+g) DATA for RTWB (h) RTWB/INV for RTWB (g) **DATA for RTO** (e) **INV for RTO** (d) WAIT for RTO (c) RTO (c+d) DATA for RS Receive **DATA for RTS WBS** WS/WB Send on Address Network RTWB RTO RS RTS (a) **Old State** 80g 80g 80g Ode

Fig. 15C

REPLACEMENT SHEET

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Fig. 15C (Continued)

## REPLACEMENT SHEET 20/43

	Re	ceiv	е						nd DATA o	
Old State	RS	RTS	RTO/ RTWB	WS	NI	MRM	МОМ	Copy tag W	Copy tag R	Copy tag l
WOfh	/w	/r	WNh/i	WNh/a					ROfh	
WO	/w	/r	WN/i	WN/a	/z	WN/r	WN/i	-	RO	
ROfh	/w	/r	RNh/i	RNh/a		<b>******</b>				
ROe	/w	/r	RNe/i	RNe/a	IOe	RNe/r	RNe/i		//////	
ROde	/w	/r	RNde/i	RNde/a	lOde					
ROd	/w	/r	RNd/i	RNd/a						
ROce	/w	/r	RNce/i	RNce/a					,,,,,,	
RO	/w	/r	RN/i	RN/a	/z	RN/r	RN/i			
IOe	/w	/r	INe/i	INe/a		INe/r	INe/i	///	//////	
lOde	/w	7r	INde/i	INde/a		XXXXX				
100	7w	/r	INd/i	INd/a						
WNi						××××××	XXXXXX			
WNh	<b></b>							$\overleftrightarrow{x}$	RNh	INh
WNc				XXXXX			XXXXX	$\overleftrightarrow{x}$	XXXXX	
WNj			/yz	/yz	/z		/yz	**	RNi	INi
WN			/y	/y	/z		/y		RN	IN
ANi				,			<del></del>	$\otimes\!$		
RNh					lNh			$\sim$	~~~~	INh
RNg				XXXXX			*****	$\infty$	XXXXX	*******
RNe			7y	Ty Ty	INe		7v~~~	<i>??</i>	***************************************	<i>777777</i>
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RNd						<del>-                                      </del>		//		V//////
RNce					INce	<del>- 10000000</del>		/_	~ / / / / / /	INce
RNcd		-				<del>- XXXXXX</del>		XX	XXXXXX	XXXXX
RNi	-	<del>                                     </del>	TINI	INi	INi	<u>xxxxxx</u>	INi	XX	XXXXXX	INi
RN			IN	IN	IN		IN	<del>                                     </del>		IN
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INde	-	$\vdash$	., 	×××××	<del> </del>	<del>    </del>	×××××	1	<i>\/////</i>	
INd	$\vdash$	$\vdash$						4	<i>\\\\\\</i>	
INce	-	-			<del>                                     </del>	<del>-                                      </del>		///	<i>\/////</i>	
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Fig. 15D

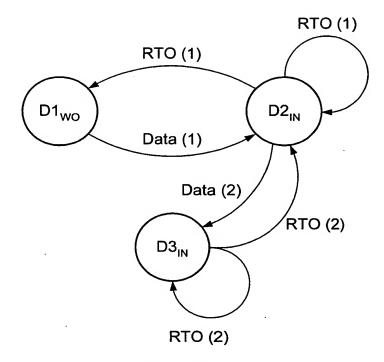


Fig. 16

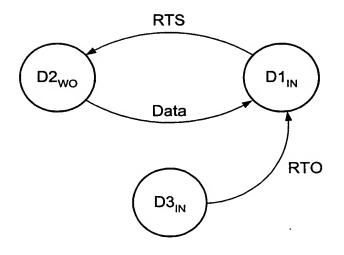


Fig. 17

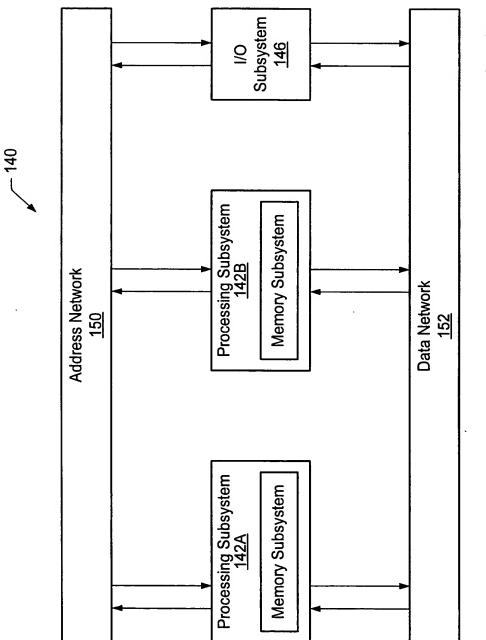
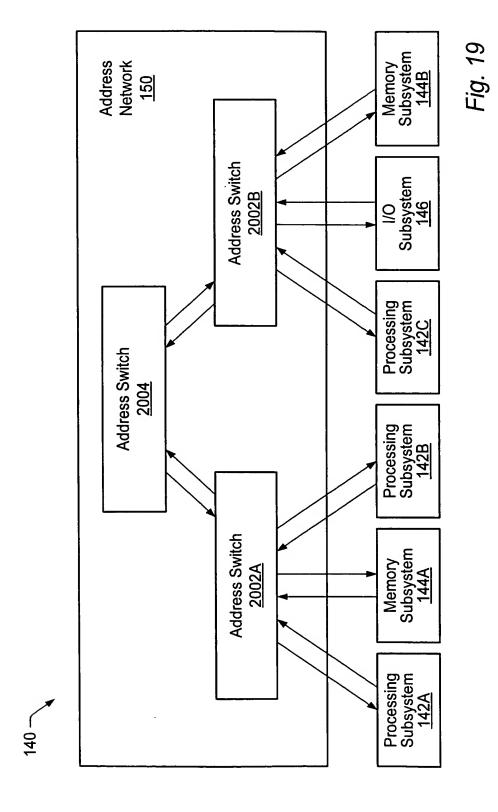


Fig. 18



### REPLACEMENT SHEET 24/43

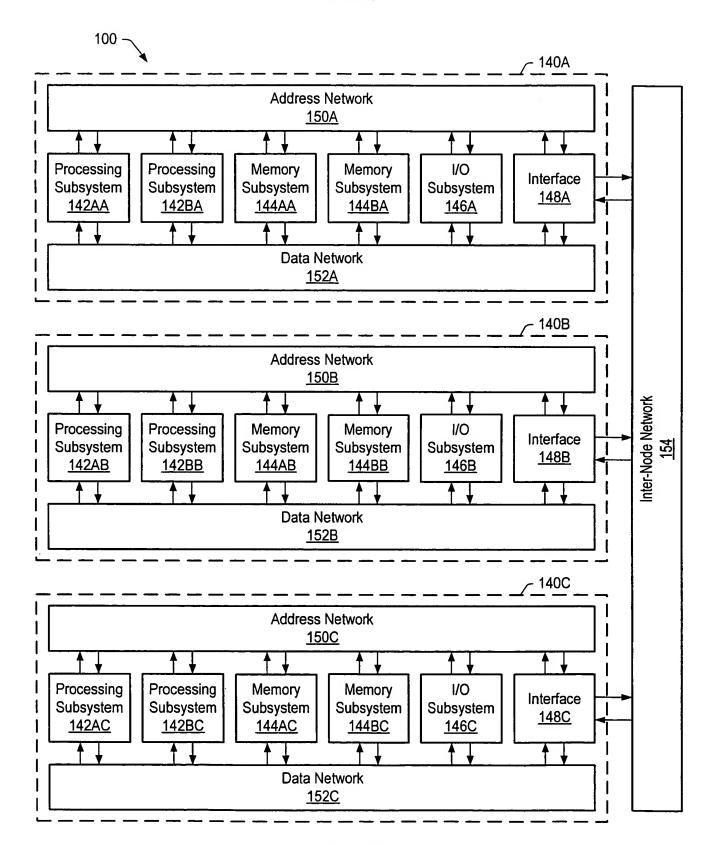


Fig. 20

# REPLACEMENT SHEET 25/43

gTag	Description
gM	The maximum access right within the node is Write Access
gS	The maximum access right within the node is Read Access. No client device in the node can have Write Access.
gl	The maximum access right within the node is Invalid Access. No client device in the node can have Read or Write Access.

Fig. 21

# REPLACEMENT SHEET 26/43

Packet			ace					
Туре	Full Name	Cacheable	1/0	Description				
PRTS	Proxy RTS	Υ		Request from an interface in a gS or gi node in response to a RTS request from another node				
PRTSM	Proxy RTS Modified	Υ		Request from an interface in a gM node in response to a RTS request from another node				
PRTOM	Proxy RTO Modified	Y		Request from an interface in a gM node in response to a RTO request from another node				
PRTO	Proxy ReadToOwn	Υ		Request from an interface in response to a RTO request from another node				
PU	Proxy Upgrade	Υ		Request from an interface asking memory to supply data for an outstanding RTO				
PDU	ProxyDataUpgrade	Υ		Request from an interface asking memory to update gTag to gM; interface supplies data for an outstanding RTO				
PRSM	Proxy ReadStream Modified	Υ		Request from an interface in a gM node in response to RS request from another node				
PIM	ProxyInvalidate Modified	Υ		Request from an interface in a gM node to invalidate data in caches and memory				
PI	ProxyInvalidate	Υ		Request from an interface in a gS or gI node to invalidate data in caches and memory				
PMR	ProxyMemoryRead	Υ		Request from an interface to memory to read coherency state(s) and data or meta-data				
PMW	ProxyMemoryWrite	Υ		Request from an interface to memory to write coherency state(s) and data or meta-data				

Fig. 22

Packet Type	Full Name	Description
DATAM	Data-Meta	Data packet containing data and coherence state information
DATAN	Data-NoPull	Data packet sent in response to PRTSM indicating no PRN will be coming
REP	Report	Report from memory to an interface indicating a transaction to be handled by the interface

## REPLACEMENT SHEET 27/43

Subtransaction	Preexisting Global Access State	New Global Access State
PRTSM	Modified	Shared
PRTOM	Modified	Invalid
PRTO	Shared, Invalid	Invalid
PU	Shared	Modified
PDU	Shared, Invalid, Modified	Modified
PRSM	Modified	Unchanged
PIM	Modified	Invalid
Pl	Shared, Invalid	Invalid
PMR	Shared, Invalid, Modified	Unchanged
PMW	Shared, Invalid, Modified	Equal to new global access state specified in DATAM packet

Fig. 24

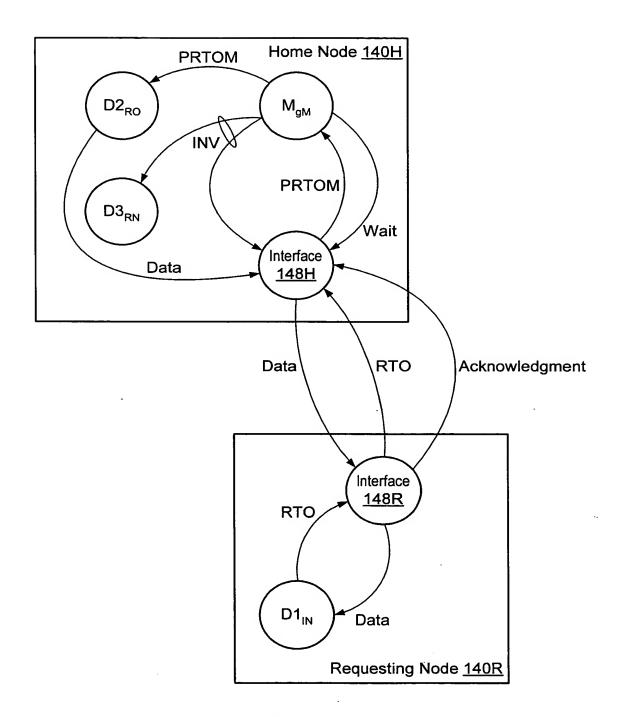


Fig. 25

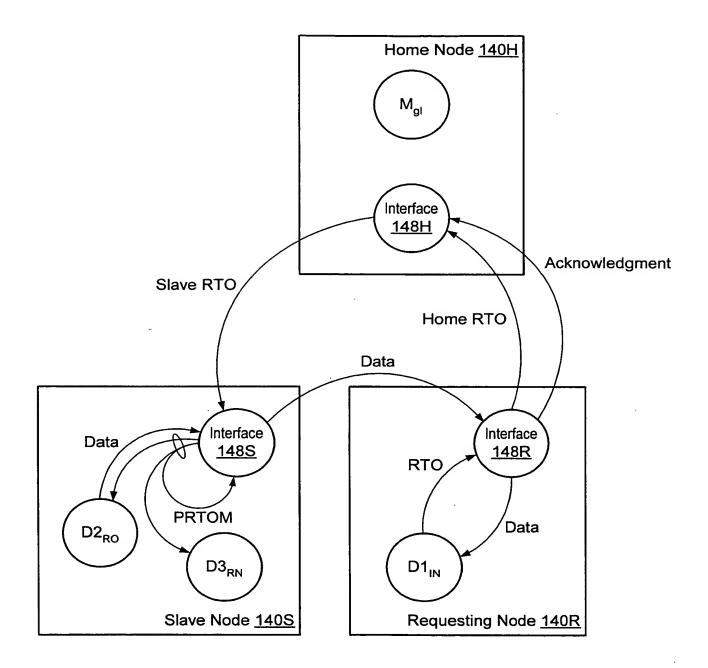


Fig. 26

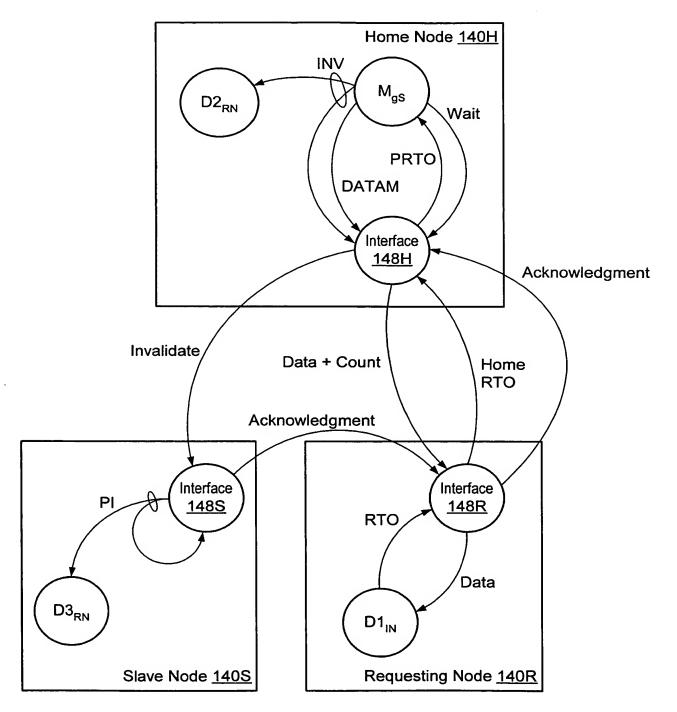


Fig. 27

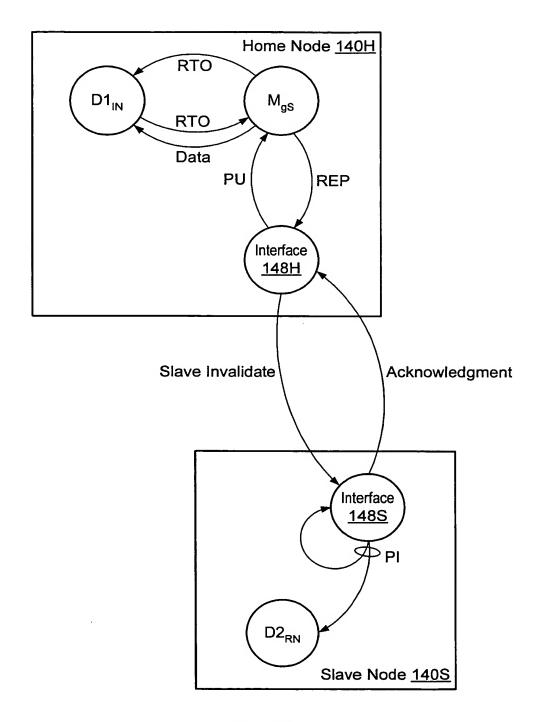


Fig. 28

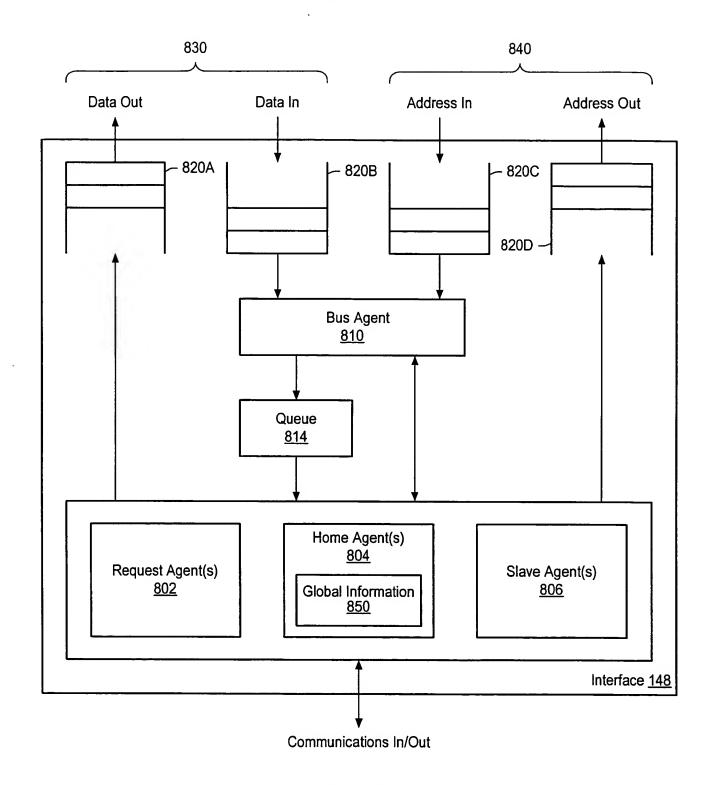


Fig. 29

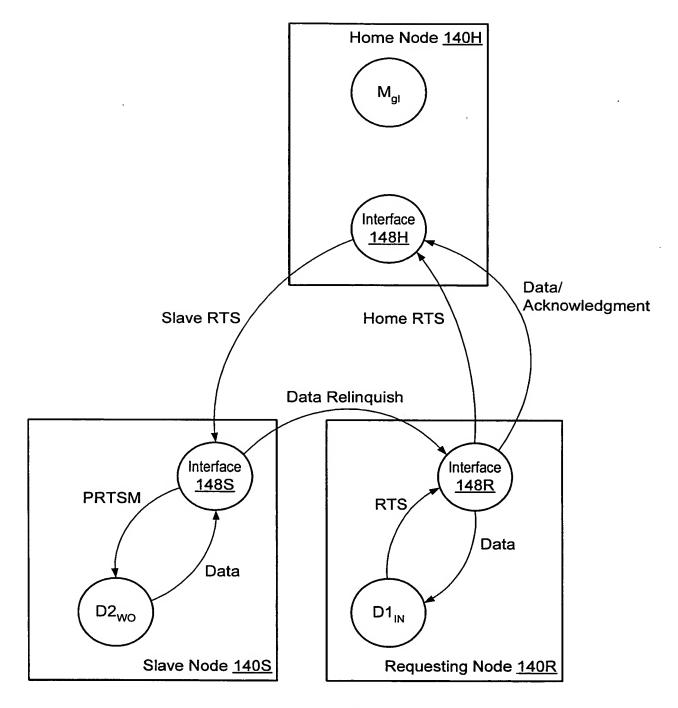


Fig. 30

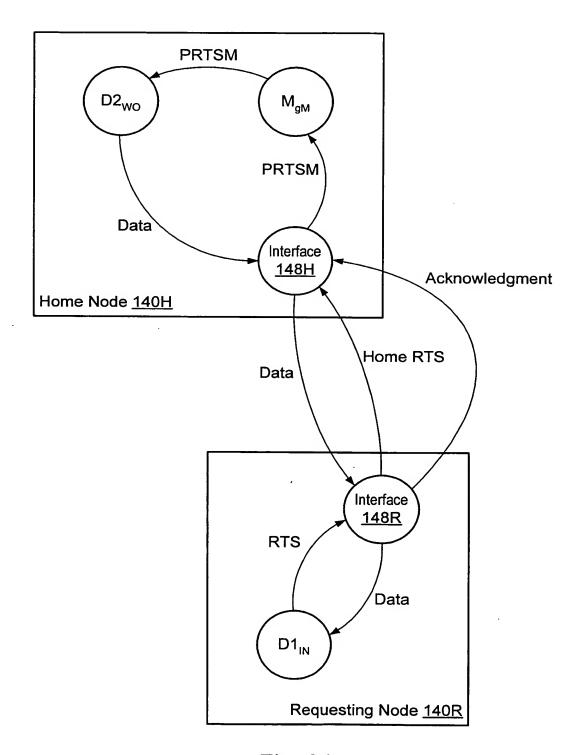


Fig. 31

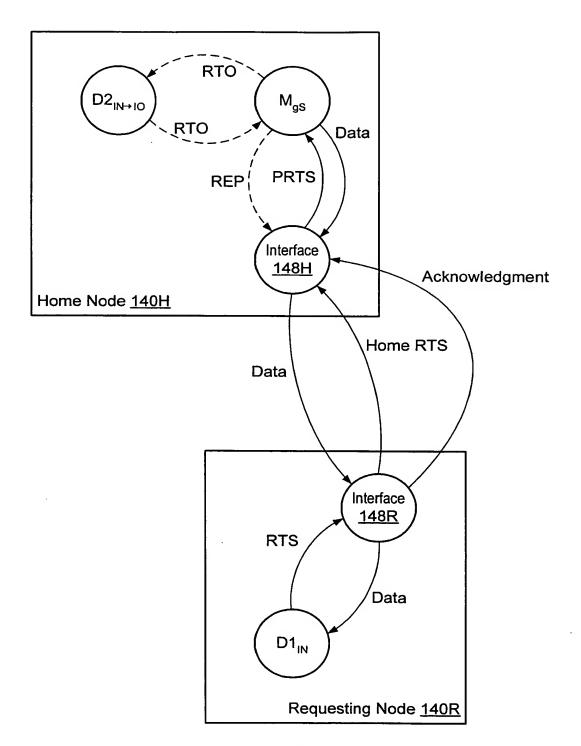


Fig. 32

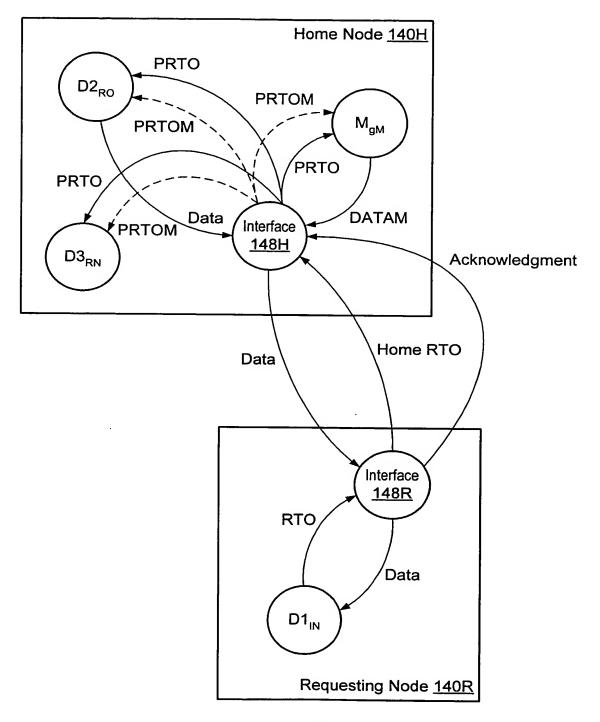


Fig. 33

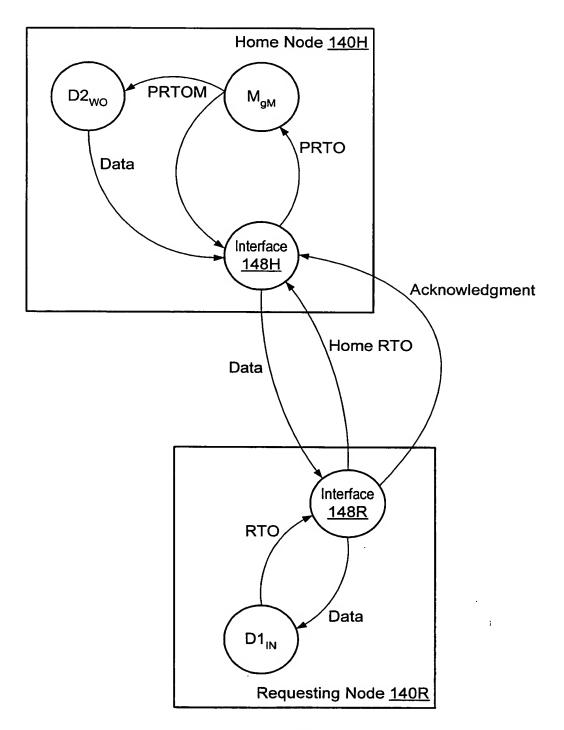


Fig. 34

# REPLACEMENT SHEET 38/43

Response Info	Coherence State	Home Memory Subsystem Action
No	gM	BC Mode Allow owning device to respond. PTP Mode Forward response to owning device
No	gS	Send REP packet to interface if write access requested
No	gl	Send REP packet to interface
Yes	gM	Respond with copy of the requested coherency unit

Fig. 35

Response Info	Memory Subsystem's Action
mN	Does not respond with copy of coherency unit because a cache within the node owns the coherency unit
mR	Does respond because memory is the owner
mS	Does respond to requests for shared access because memory has shared copy and no active device has ownership; does not respond to requests for write access
ml	Does not respond because memory's copy is invalid

Fig. 36

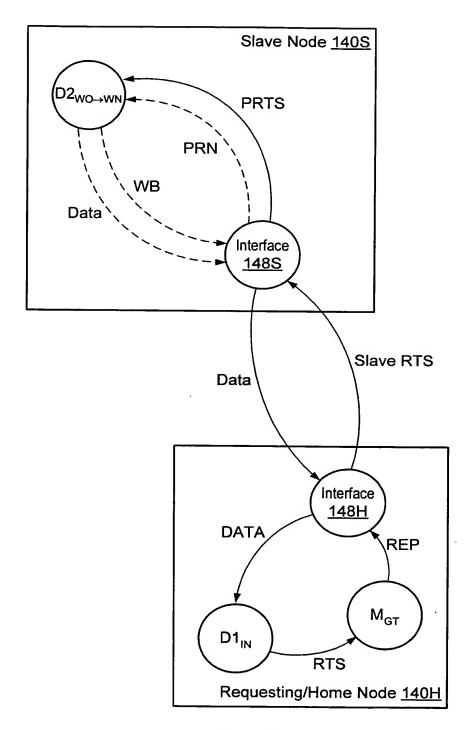


Fig. 37

### REPLACEMENT SHEET 40/43

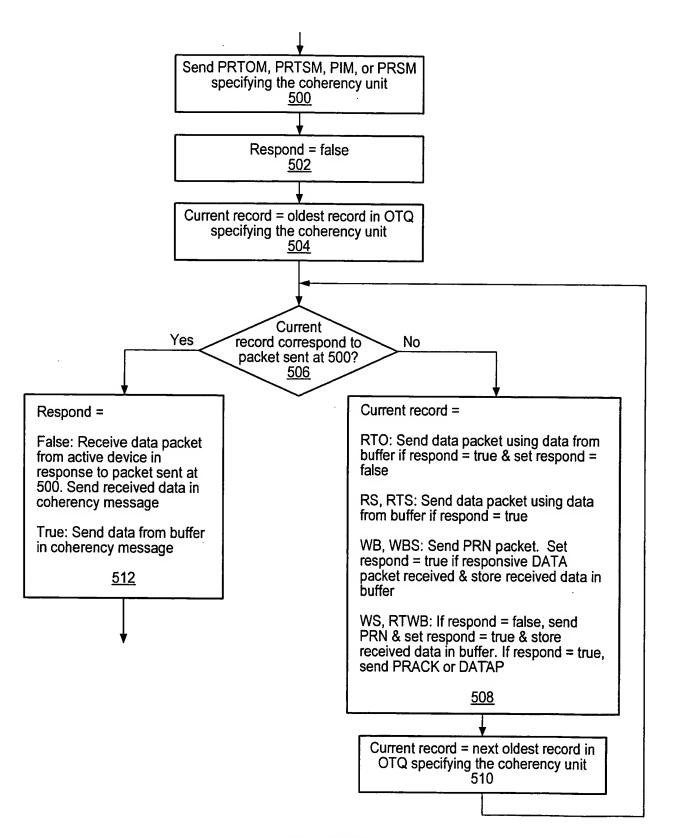


Fig. 37A

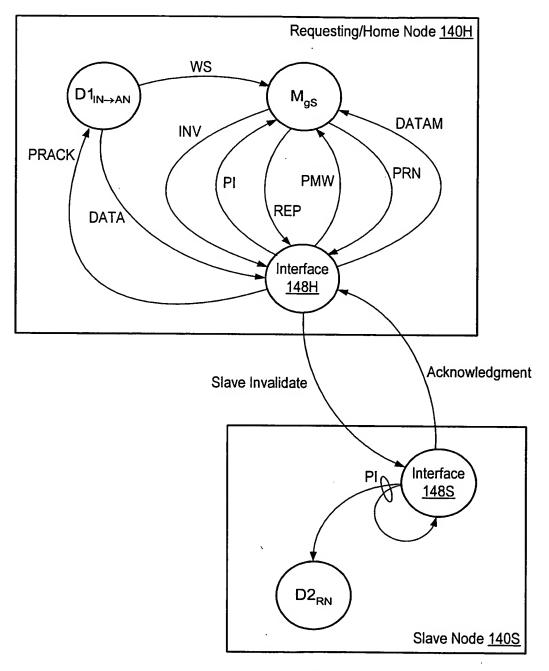


Fig. 38

# REPLACEMENT SHEET 42/43

Packet Type	Full Name	Description
RWB	Remote WB	Request sent from an active device in a multi-node system to an interface in order to initiate a WB transaction
RWBS	Remote WBS	Request sent from an active device in a multi-node system to an interface in order to initiate a WBS transaction
RWS	Remote WS	Request sent from an active device in a multi-node system to an interface in order to initiate a WS transaction

Fig. 39

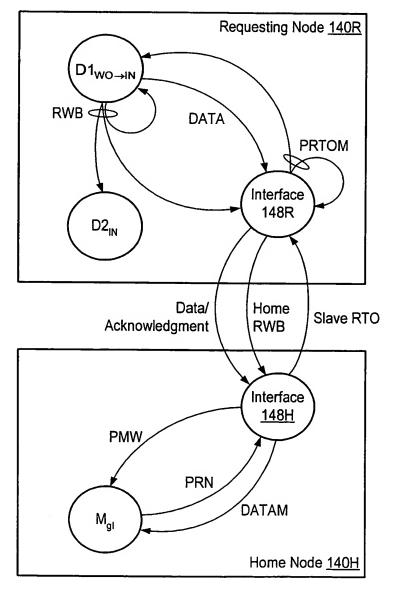


Fig. 40

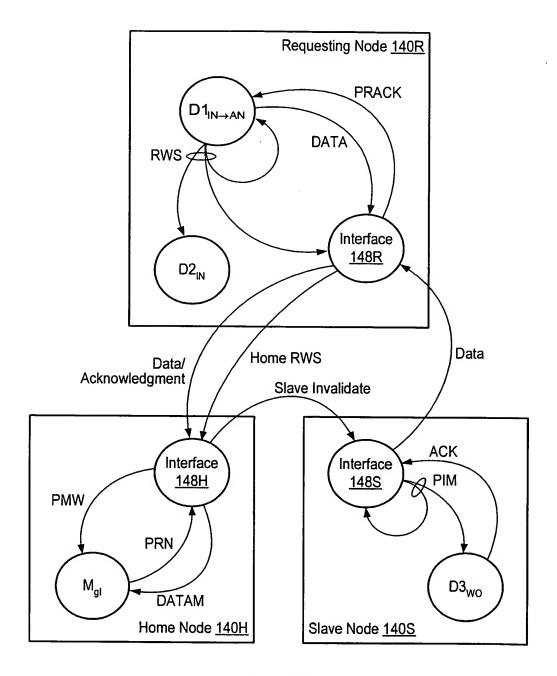


Fig. 41